

# Measuring learning organisations

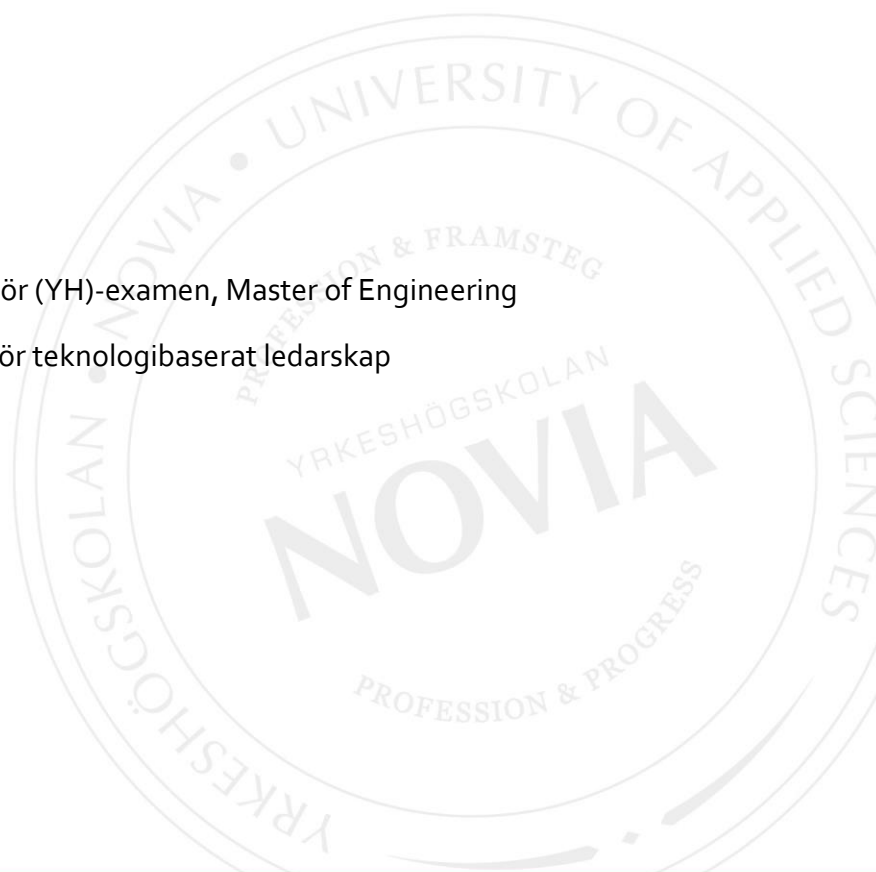
## A case study

Tommi Ranta

Examensarbete för Ingenjör (YH)-examen, Master of Engineering

Utbildningsprogrammet för teknologibaserat ledarskap

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Författare: Tommi Ranta

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Handledare: Roger Nylund

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### Abstrakt

Världen ändras och blir mer komplex i en exponentiell takt. Organisationer måste konstant lära och förnya sig för att hålla sig konkurrenskraftiga. Detta examensarbete ämnar klargöra hur lärande uppstår, vilka byggstenarna för en lärande organisation är, hur man mäter en lärande organisation, samt utifrån dessa identifiera utvecklingsmöjligheter i organisationen.

Den teoretiska referensramen hävdar att megatrender, kunder samt samarbetspartners agerar som input för en lärande organisation. Utifrån detta utvärderar och utvecklar sig en lärande organisation konstant. Framgång i denna strävan leder till nya kunder och mer utmanande projekt, vilket innebär ett ökat resultat för företaget samt bättre motivation bland arbetare.

Den empiriska delen av studien bestod av en enkät för utvärdering av en lärande organisation samt analys av resultaten. Examensarbetets forskningsfrågor blev besvarade och utvecklingsförslag identifierades hos företaget. Avhandlingen ger en teoriöversikt för lärande organisationer samt demonstrerar hur en lärande organisation kan mätas för att utveckla sig själv.

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Author: Tommi Ranta

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### Abstract

The world is changing and getting more complex at an exponential rate. Organisations need to constantly learn and renew themselves in order to stay competitive. The purpose of this thesis was to clarify how learning occurs, identify the building blocks of a learning organisation, find out whether a learning organisation can be measured, and finally through these tools identify improvement areas in an organisation.

The theoretical framework of the thesis is that external environments, such as megatrends, customers and partners function as inputs to the learning organisation. The organisation constantly evaluates its actions through measurements, in order to renew itself and stay competitive. The successful renewal of a learning organisation leads to new customers and more challenging projects, which have a positive impact on the company's result and work motivation.

The empirical part of the survey consisted of a learning organisation survey in an organisation and analysis of the results. The research questions were answered and improvement suggestions identified as a result from the survey. This thesis functions as an overview of the theories of the learning organisation and demonstrates how a learning organisation can be measured for improvement.

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Language: English

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# **1 Introduction**

## **1.1 Background**

Technology is evolving at an exponential rate and becoming more and more important for organisations. Moore's law has remained valid for more than six decades (Roser & Ritchie, 2018). The weight of the information technology sector has steadily increased for the past ten years on the S&P 500 index. Today the IT sector is the biggest individual sector with a weight of over 20% (S&P 500 Sector Weightings, 2018). A report from Deloitte (2017) shows that the two most frequent words in Fortune 100 companies' mission statements are "innovate" and "technology".

In Finland, the total revenue for the ICT sector was 12.4 billion euros in the year 2017 (Teknologiateollisuus, 2018). Ten years earlier, before the economic recession, the sum was 6.7 billion euros. Consumerization and digitalization projects in organisations drive the economic growth of the software business (Teknologiateollisuus, 2017). A report by the Ministry of Economic Affairs and Employment predicts that the amount of innovation and competition increases, because the amount of companies in the IT sector is increasing (Metsä-Tokila, 2018).

According to The Finnish Information Processing Association (TIVIA, 2018), we would immediately need an additional 7000 software experts. The amount is growing annually by 3800 experts. They predict that this will block the economic growth in Finland. By 2020, there will be a lack of 15000 software experts, which has an annual impact on the national economy by an estimated 3-4 billion euros.

Sydänmaanlakka (2001) wrote that we live in a turbulent world where the only constant thing is change. He argues that only half of the information you learn today is applicable five years later. Organisations must learn faster than the competitors to sustain their competitive advantage (Ruohotie, 1997; Marquardt 1999). How can we keep up with the accelerating velocity of new technologies and the need for experts in order to stay competitive and benefit from the growing market?

## **1.2 Problem area**

Viitala (2013) argues that knowledge is one of the most valuable assets in many organisations and even the cornerstone for the valuation of some companies. Organisations

must consistently be able to create new knowledge and spread it across the organisation in order to stay competitive (Nonaka, 1991). Marsick and Watkins (2003) state that organisations expect their employees to continuously learn and create new knowledge in groups and the whole organisation. Marquardt (1999) argues that it is challenging to find time to learn when the requirements in the workplace constantly change. Furthermore, he proposes that organisations need to transform themselves into learning organisations.

According to Ruohotie (1997), obsolete information and knowledge is a real threat especially for highly educated people. In addition, he states that employees are expected to actively develop their competence. Ideally employee growth continues throughout their career and one always feels that one has a possibility to grow and develop. This affects the employee's intrinsic motivation positively and rises their professional competence. Thomas (2000) argues that a sense of competence is one of the four intrinsic rewards at work. A sense of competence involves feeling that the activities meets or even exceeds one's expectations and that one feels satisfaction and pride in how work is carried out.

Being able to adapt to and master technological changes in order to stay competitive is important for our organisation. In addition, there is an increasingly hardening competition for experts in our organisation domain (Klemetilä, 2017; Lehto, 2017). It is not only enough to remain competitive, we must also be an attractive employer. This is achieved by providing a workplace where employees feel that they can grow, work with interesting projects in order to stay competitive on the employee market.

### **1.3 The research problem**

Garvin (1993) argues that more performance-improvement programs fail than succeed. The reason for this is that continuous improvement requires a commitment to learning. In another article Garvin, Edmondson and Gino (2008) argue that organisations do not reach the desired results due lack of concrete actions and tools. Despite increasing research interest towards learning organisations there is a shortage of a theoretically derived measure of the learning organisation (Yang, Watkins & Marsick, 2004).

The aim of this thesis is to answer the following research questions (RQ):

- RQ1: How does learning happen?
- RQ2: What are the building blocks of a learning organisation?
- RQ3: Can one measure the level of a learning organisation?

- RQ4: Is it possible to identify what areas to improve in order to constantly learn and develop?

## **1.4 Delimitations**

Matošková (2016) lists various methods of measuring the results of knowledge in an organisation. These are among others; financial methods, such as market capitalization and return on assets, and scorecards measuring intellectual and human capital. Ojala (2008) concludes that measurements for managing knowledge in an organisation consists of e.g. increased revenue from improved products and services, improved customer satisfaction, improved quality, and a more appealing workplace. The focus of this thesis is to find means how to measure the building blocks of a learning organisation rather than measure the competence level of the organisation or the business impact that a learning organisation generates. Increased revenue, quality and satisfaction among customers and employees is affected by countless parameters, which makes it challenging to specifically prove what the result from increased knowledge in the organisation is (Ojala, 2008).

## **1.5 Thesis**

By evaluating and measuring the state of learning in my organisation, it is possible to identify improvement areas within the organisation. By taking action, and successfully improving upon the identified areas, it is possible to better learn as an organisation. As a result, the organisation is more competitive on the market. The employee satisfaction increases and makes the organisation more appealing on the job market.

## **1.6 The structure of the thesis**

**Chapter 2** outlines the theoretical background for the thesis.

**Chapter 3** describes the theoretical framework for the thesis.

**Chapter 4** presents the method that was used for this research.

**Chapter 5** provides an overview of the research results.

**Chapter 6** contains discussion, concludes my findings as well as proposes alternatives for future research.



## **2 Literature review**

In this chapter the earlier research on the topic is summarized. Chapter 2.1 provides an overview of the constructs of learning. Chapter 2.2 focuses more closely on how an individual learns. Chapter 2.3 presents the concepts of group learning and continue onward to organisational learning in chapter 2.4. The definition and building blocks of a learning organisation are outlined in chapter 2.5. Chapter 2.6 focuses on how a learning organisation can be measured. The review ends with an overview of knowledge management in chapter 2.7 and a summary of the literature in chapter 2.8.

### **2.1 From information to knowledge**

This chapter summarizes the theories on how learning happens and transforms into knowledge. According to Sydänmaanlakka (2001) learning can be described in many ways. Learning is to change, grow and mature. It is something that happens all the time, both in formal and planned manners as well as by accident. Sydänmaanlakka (2001) and Ojala (2008) state that learning and gaining knowledge is a process where an individual acquires new information, skills, attitudes, experiences and contacts that lead to a change in the person's actions. Ruohotie (1997) argues that knowledge is the result of thinking contributed by intellect and that thinking is born from interest towards a topic. Thus knowledge is born from interest through learning. Viitala (2013) states that knowledge helps a person cope with her assignments. Knowledge also affects how one is appreciated by others and what her social status in society is. Learning is part of human nature and because of that it increases one's feeling of competence and satisfaction.

Viitala (2005) defines professional skills as a combination of the following traits: personal preparedness for learning, creativity, problem solving skills, social skills, organisation's knowledge, knowledge in the problem domain. Previously employees could rely on their experience, whereas nowadays employees are constantly facing situations where the margin for error is big and errors also occur (Viitala, 2013). This poses requirements that one constantly needs to learn new things besides the regular work.

There are four types of learning: adaptive learning, anticipatory learning, generative learning, and single-loop and double-loop learning (Sydänmaanlakka, 2001; Marquardt, 1999). Adaptive learning means that one learns from experience and reflection. Anticipatory learning is the process of acquiring knowledge from expectation. Generative learning utilizes reflection, analysis or creativity. Single-loop and double-loop learning that differentiates the

depth of reflection after action. Single-loop and double-loop learning is presented in chapter 2.4.2. The thesis has proposed how learning happens in this chapter. The next chapter introduce the factors for how individual learning happens.

## **2.2 The individual as a learner**

Theories on how the individual learns are offered in this chapter. Sydänmaanlakka (2001) argues that learning is a process where knowledge is created by modifying experiences and is closely related to practical experiences. In addition, it is assumed that the learner has previous work experience, is able to evaluate one's own actions and is motivated to develop oneself. Motivation and the will to learn is a pre-requisite for any learning. These theories are confirmed by Ojala (2008), who writes that an adult learns from previous experience and from a need to learn. She also argues that motivation, co-learners and the learning environment plays a crucial role in learning. Sydänmaanlakka (2001) has developed a model, which is adopted from Kolb's experiential learning cycle. It consists of four phases: the willingness to learn, perceiving learning experiences, documenting what was learned, and experimenting and putting the learning into practice.

According to Ruohotie (1997) the learning process is related to autonomy, critical self-reflection and self-management. It is a process that requires knowing one's capabilities, self-knowledge, planning and communication. Viitala (2013) argues that the need for autonomy requires that the person can make decisions that affects oneself at least to some extent. Ruohotie (1997) states that there are different challenges for adult learners. An adult learner might oppose the questioning of her beliefs. One might also be against dichotomies in the social and cultural values. In addition, empowered people might feel anxiety when learning requires letting go of something that is familiar.

Self-management plays a role in knowledge creation, which is created from the innovative learning process (Ruohotie 1997). This requires such skills as deep learning, the ability to question things, control of comprehension and critical thinking among others.

This chapter summarizes theories on how the individual learns. Ojala (2008) argues that expertise is often the result of teamwork and co-operation rather than relying on one person's knowledge. Theories about group learning are proposed in Chapter 2.3.

## 2.3 Group learning

This chapter references theories that explain how group learning occurs. Sydänmaanlakka (2001) argues that activities in an organisation increasingly happens at team level. A team is a group of people with complementary skills and a common goal. Viitala (2013) states that learning in an organisation is a social event. Group learning is often required because of the complexity and amount of people in an organisation. Benefits of group learning according to Viitala (2013) are that more knowledge is available in a group of people, and that the effects of learning in a group is converged with individual learning. Sydänmaanlakka (2001) proposes that the team learning cycle starts with the team's current activities, which are evaluated in order to improve. Based on the evaluation a new common understanding of the current situation and the future state is agreed. Finally the team plans their activities on how to improve the situation.

The pre-requisites for team learning are: a common goal and operations model, shared responsibility, and good team spirit. A group learning situation that produces new knowledge can happen in both an organised and spontaneous manner (Viitala, 2013). She argues that learning happens when people share and combine knowledge and experiences. Ruohotie (1997) argues that group discussions, and sharing experiences exposes and clarifies tacit knowledge.

Otala (2008) states that an organisation cannot learn and be innovative if everyone thinks in the same way. Different point of views and ways of thinking are required (Otala, 2008; Ruohotie, 1997). Otala (2008) argues that diversity is not born by itself because people tend to subconsciously gravitate towards similarity. Organisations should thus systematically strive towards diversity by ensuring that the personnel consists of different type of people, education, experience, age, and gender. The skill of finding alternative point of views contributes to creation of new knowledge (Ruohotie, 1997). Identifying alternatives requires the skill to ask the right questions, redefine, and use metaphors. Dialogue is a crucial part of team learning (Viitala, 2013; Ruohotie, 1997; Otala, 2008). Viitala (2013) differentiates a dialogue from a discussion by stating that personal targets are often apparent in discussions, whereas a dialogue is an open exchange of assumptions and opinions, active listening and a strive to understand the others views. Group learning has been referred in this chapter, theories for organisational learning are presented in the next chapter.

## 2.4 Organisational learning

Organisational learning theories are presented in this chapter. More specifically, two prevalent organisational learning frameworks are presented in chapters 2.4.1 and 2.4.2.

Renewal and development of an organisation is also called organisational learning (Viitala, 2013). It refers to the process that the organisation uses to learn. Sydänmaanlakka (2001) refers to organisational learning as the ability to renew itself and change its operation. In practice, renewal means that the organisation has the ability to constantly acquire new knowledge. Learning that leads to a competitive advantage means that an organisation learns faster than its competitors, even to the extent that learning happens pre-emptively and leads to a change in the organisation (Ojala, 2008). Learning is a creative process that is difficult to lead and requires collective intuitive vision to succeed. Sydänmaanlakka (2001) argues that the organisational learning cycle is as follows. Firstly, the organisation needs a systematic way to collect feedback. Next, the feedback is analysed and interpreted. The organization clarifies its vision, strategy and targets based on the common understanding. Based on the information, the organisation renews its thinking and operation models and increases its knowledge. Academically acclaimed theories related to organisational learning are presented in the following two chapters.

### 2.4.1 Tacit and explicit knowledge

Ruohotie (1997) writes that the result of knowledge and learning are skills and intuition. Skills are tangible. Intuition is an internal comprehension, one is competent without proof. According to Ojala (2008) explicit knowledge and skill can be described by words, whereas tacit knowledge is something that is difficult or even impossible to describe in words. It is personal information that is tightly connected to action and a specific situation, which makes it difficult to transfer to others. Ojala (2008) states that making tacit knowledge explicit is increasingly important when the so called “baby boomers” reach retirement age.

Nonaka (1991) has defined the knowledge-creating company as an organisation that is able to continuously able to innovate by the employees’ commitment to the organisation and its mission. This happens by making personal knowledge available to the organisation at all levels based on the following four patterns (Nonaka & Takeuchi, 1995):

1. from tacit to tacit, which is called socialization
2. from tacit to explicit, which is called externalisation

3. from explicit to explicit, which is called combination
4. from explicit to tacit, which is called internalization

Socialization is the process of sharing experiences, which lets individuals learn from each other through observation, imitation and practice. Externalization is the process which is of high importance to knowledge-creation. It's the system of concept creation and triggered by dialogue and reflection. Combination is the process of making systemizing concepts into a knowledge system e.g. by documentation, meetings, and other means of communication. Internationalization is the process of applying what has been learned in practice; learning by doing. In a knowledge-creating company these four patterns are in constant interaction with each other. This is called the knowledge spiral as the interaction between patterns move through the organisation in communities, groups, departments etc. (Nonaka & Takeuchi, 1995)

Nonaka and Takeuchi (1995) list five conditions that enable the knowledge-creating company to thrive. These are:

- A clear vision and strategy of what kind of knowledge should be developed.
- Allow autonomy for individuals to increase the chance on introducing new opportunities and increase employee motivation.
- Constant reflection and questioning of the status quo.
- Allow redundancy of information in order to gain a deeper understanding how individuals interpret the knowledge and get alternate perspectives to a solution.
- Requisite variety, which means that everyone should have equal access to information in order to be able to provide the best response to a problem.

#### **2.4.2 Single-loop and double-loop learning**

Argyris (1999) argues that there are two types of learning. The first type is called single-loop learning where errors are detected and corrected without questioning the values of the system. The second type is called double-loop learning where the errors are corrected by first examining and fixing the governing variables and the actual actions that surface thereof. Single-loop learning might be sufficient to get the everyday job done, but double-loop learning is relevant for more complex work. In addition, Argyris (1982) has proposed two

theories-in-use called the Model I theory-in-use and Model II theory-in-use. The Model I theory-in-use assumes that people behave both consciously and unconsciously by four governing values:

- Strive to stay in control of the situation
- Winning instead of losing
- Suppress negative feelings
- Be rational

Furthermore, Argyris (1982) argues that these behaviours tend to make individuals and thus also groups behave in a defensive manner. Individuals do not seek feedback in the fear of confrontation. This causes the individual only learning in the boundaries of oneself. The result is a so called Model O-I learning system, where people reason in counterproductive ways and is a limited learning system. Model II theory-in-use on the other hand invites individuals to confront one's ideas, seek help from those who are more knowledgeable, and co-operate instead of trying to compete against each other. This leads to a less defensive behaviour, increased commitment and more effective decision making. The individual will learn from the feedback that they receive. The Model O-II learning system thus increases the probability for a corrective response to be made. In addition to addressing problems through single-loop-learning, where applicable, it is also able to utilize the double-loop-learning.

Characteristics of organisational learning were outlined in this chapter. In addition, two different theories were referenced that are connected to organisational learning. These are the theories of Tacit and explicit knowledge and Single-loop and double-loop learning. Literature on the topic of learning organisations is presented in the next chapter.

## **2.5 The learning organisation**

The term learning organisation is defined in chapter 2.5.1. Building blocks for the learning organisation are proposed in the subsequent chapters.

### **2.5.1 Definition**

Sydänmaanlakka (2001) defines the learning organisation as an organisation that is continuously able to adapt, change, and renew itself according to the requirements from its

surroundings, and is also able to learn from the past experiences and able to quickly change its course of action. He critiques the usage of the term learning organisation and instead proposes to use the term intelligent organisation. He argues that the intelligent organisation is able to foresee its need for renewal in an early stage, is able to learn faster than the competition and also able to apply the new knowledge faster than its competitors.

According to Ojala (2008), a learning organisation is more than merely an organisation that is able to renew its learning. She states that the learning organisation is able to utilize all available knowledge to continuously renew its actions. It is also able to evaluate itself and use this information to further develop itself. The structure of a learning organisation supports identifying the learning needs and also enables effective learning and sharing of information. Viitala (2013) defines the learning organisation as an organisation that is able to identify the learning needs, renew its knowledge and utilize it.

Garvin (1993) argues that there is disagreement of the definition of a learning organisation. There is a consensus that it is the organisation's ability to learn over time and turn it into improved performance, but that it differs when it comes to other aspects. Thus, he proposes that "a learning organization is an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behaviour to reflect new knowledge and insights".

Yang, Watkins and Marsick (2004) define the learning organisation as "one that has the capacity to integrate people and structures in order to move toward continuous learning and change"

### **2.5.2 Continuous learning and improvement**

Senge (1990) argues that personal mastery is one of the practices of the learning organisation. He emphasizes the individual's responsibility to continuously learn and aim for lifelong learning. He proposes that the organisation's opportunity to learn depends on individual skills. A culture and desire for continuous improvement is important in learning organisations (Hill, 1996; Marquardt, 1999; Ojala, 2008). Systematic problem solving and a culture that supports learning are needed characteristics (Garvin, 1993; Viitala, 2013).

### **2.5.3 Experimentation, feedback and reflection**

Feedback and reflection, as an important part in organisational learning, were presented in chapters 2.3 & 2.4. Ojala (2008) insists that learning from successes and failures,

encouraging experimentation and questioning is part of a learning organisation. Sydänmaanlakka (2001) proposes that a feedback system is needed in intelligent organisations. Garvin (1993) and Goh (1998) state the importance of experimenting at work. Garvin, Edmondson and Gino (2008) argue that a supporting learning environment, where it is safe to disagree with each other, opposing ideas are valued and taking risks into the unknown are building blocks for a learning organisation.

#### **2.5.4 Teamwork**

Senge (1990) argues that without teams that learn there is no learning organisation. Group thinking where defensive barriers are removed also fosters individual growth. These characteristics were presented in chapter 2.4.2 regarding organisational learning. Goh (1998) proposes teamwork as the core building block for learning organisations as it brings together people's collective skills. He emphasises the need for cross-functional teams for teamwork to be effective. Group learning is an important part of organisational learning (chapter 2.3).

#### **2.5.5 Company vision**

A clear vision and values are required in learning organisations (Ojala, 2008; Sydänmaanlakka, 2001). Sydänmaanlakka (2001) also proposes that strategic learning is needed in organisations. Viitala (2013) argues that a shared vision towards continuous improvement through leadership, as well as a strategy process that supports learning plays an important role. Senge (1990) insists that a genuine shared vision that commits people is one aspect of the learning organisation.

#### **2.5.6 Shared learning**

Ojala (2008) proposes that knowledge sharing should be appreciated and rewarded. Information systems are needed to support knowledge sharing (Sydänmaanlakka, 2001). Garvin et al. (2008) propose that a systematic and clearly defined way to share information is needed in learning organisations. One alternative according to Garvin (1993) is to utilize work rotation. Hill (1996) suggests improving coaching and mentoring skills as well as group learning workshops as alternatives to share knowledge. According to Marquardt (1999) the organisation should essentially work as a single brain. Equal continuous access to information also has a positive effect on learning organisations (Marquardt, 1999; Viitala, 2013).



### **2.5.7 External environments**

Otala (2008) argues that we should work in close co-operation with customer to identify and predict new customer needs. Each individual's knowledge should correspond to the customers' current and future needs. Sydänmaanlakka (2001) and Hill (1996) insist that the organisation is customer focused. Garvin (1993) and Viitala (2013) propose that an organisation should learn by benchmarking its competitors.

### **2.5.8 Leadership**

Otala (2008) states that an organisation continuously needs to follow-up on the most important changes that affect the organisation's operational environment. Viitala (2013) argues that an efficient development programme of the personnel is required. According to Garvin et al. (2008) leadership plays an important role as a building block of the learning organisation through by leading by example. Goh (2008) recommends a shared leadership in non-hierarchical organisations. He argues that leaders have the role of a coach, need to involve employees in decision-making, and be able to accept criticism. Marquardt (1999) offers a community-like environment in an agile and flexible organisation that is able to adapt and renew itself when the environment changes.

The building blocks of a learning organisation as well as a definition of what the term learning organisation means in the context of this research, was displayed in chapter 2.5. Methods for how a learning organisation can be measured are explored in chapter 2.6.

## **2.6 Measuring the learning organisation**

Different research how a learning organisation can be measured are proposed in this chapter. Each sub-chapter presents a measurement methodology from previous research.

Garvin (1993) argues that the definitions of a learning organisation are too abstract and because of that the ways to properly measure the learning organisation are lacking. Garvin et al. (2008) insist that this is the reason why many organisations fail to become or identify themselves as learning organisations. In addition, he writes that tools for assessment are missing. Goh (1998) suggests that a measurement process is implemented to analyse the current state of an organisations learning capabilities. He insists that measurements should track the performance also after the planned changes have taken place.

### **2.6.1 Diagnostic survey of the learning organisation**

Garvin (1993) initially proposed that a half-life curve is used to measure the effects of the learning organisation. The half-life curve measures the time it takes to achieve a 50% improvement in a specific performance measure. He however points out one weakness with the measurement that it only focuses on results.

Garvin et al. (2008) introduced the diagnostic survey of the learning organisation, which is a survey relying on three building blocks. Firstly, there must be a supportive learning environment, secondly concrete learning practices must take place, and thirdly there must exist leadership that reinforces learning. Furthermore, the three building blocks are defined to have the following characteristics. The supportive learning environment is characterised by psychological safety, appreciation of differences, openness to new ideas as well as ensuring time for reflection. Concrete learning processes and practices consist of experimentation, information collection, analysis, education and training, and finally information transfer. The leadership that reinforces learning building block consists of topics connected to leadership of the managers. (Garvin et al., 2008)

### **2.6.2 Dimensions of the learning organisation questionnaire**

Marsick & Watkins (2003) recommend the dimensions of the learning organisation questionnaire (hereafter DLOQ) as an instrument to measure the learning organisation. The DLOQ consists of seven dimensions:

1. Create continuous learning opportunities.
2. Promote inquiry and dialogue.
3. Encourage collaboration and team learning.
4. Create systems to capture and share learning.
5. Empower people toward a collective vision.
6. Connect the organisation to its environment.
7. Provide strategic leadership for learning.

These dimensions result in the following key results: financial performance and knowledge performance. The survey is based on perceptions rather than financial performance. They

propose that this is one of many tools that can be used by human resource development. Yang et al. (2004) argue that the seven dimensions fit the research data but suggest that more studies e.g. over cross section of employees in the same organisation is needed. Furthermore, they recommend to utilize the DLOQ to measure change over time. Kim, Egan and Tolson (2015) insist that there is not sufficient evidence to prove the seven dimensions of a learning organisation and recommend further research on the topic.

### **2.6.3 The learning organisation test**

Otala (2008) offers the learning organisation test to identify at what state the organisation is on its transition towards a learning organisation. She argues that the test helps identify development items that will improve learning in the organisation. The test asks both the current state of a subject as well as how important it is for the responder. Otala (2008) insists that it is not worth improving areas that are not seen important by the employees.

### **2.6.4 Knowledge leadership survey**

Viitala (2004) proposes a knowledge leadership framework based on two presumptions: leadership that supports learning in an ideal situation, and leadership that supports learning in practise. The first part of the study was a qualitative research that set the foundation for the second part of the study, which resulted in the knowledge leadership survey. The main dimensions of knowledge leadership are:

1. Orienteering of learning.
2. Creating climate that supports learning.
3. Supporting individual and group level learning processes.
4. Acting as a role model.

According to Viitala (2004) further studies are required to gain a better understanding of knowledge leadership.

### **2.6.5 Measuring knowledge**

Matošková (2016) proposes different methods that can be used when measuring the knowledge of an organisation. There are methods to measure knowledge on organisational level, group level and individual level. Organisational level measurements are divided into

financial methods, non-financial methods and score-card methods. Group level measurements focus on evaluating the influence of knowledge on performance, information sharing and identifying who the originator of knowledge is. Individual level methods involve measuring the willingness to learn, explicit level of knowledge, level of tacit knowledge, and predicting future performance. Matošková (2016) recommends that one thoroughly evaluates which method suits the needs best. The current research is lacking validity measures of the chosen methods and the research mostly contributes to the theoretical knowledge of measuring knowledge.

Five different alternatives how a learning organisation or knowledge in an organisation is measured has been listed in this chapter. Theories how knowledge is managed in organisations are proposed before the summary of the literature review.

## **2.7 Knowledge management**

Literature around the concept of knowledge management are looked at in this chapter. Definitions of various terminologies used are proposed first. Literature for topics such as Intellectual capital, Competence management and the role of Human resource development are proposed after that

### **2.7.1 Definition**

Sydänmaanlakka (2001) defines knowledge management as the process that is used to create, acquire, store, share and apply knowledge in an organisation. The individual's knowledge transforms into group knowledge and organisational knowledge through sub-processes and makes tacit information explicit (see chapter 2.4.1). Viitala (2013) argues that the results of knowledge management are improved organization practices, better products and services, innovations and eventually improved financial performance as an end result.

Organisational knowledge is often connected to terms such as key competence, strategic knowledge, critical knowledge and core competence (Ojala, 2008). She argues that the terminology is used in a variety of ways. Ojala (2008) defines the terminologies in the following way:

- *Key competence*, which is all the knowledge that is required by the organisation to function. Key competencies can have different value and are identified by defining the competence needs.

- *Critical or strategic competence* is knowledge that the organisation needs to fulfil its strategic targets.
- *Core competence* consists of one or more strategic competencies. It is connected to an organisation's competitive advantage and how it differentiates itself on the market.

### **2.7.2 Intellectual capital**

Otala (2008) argues that intellectual capital consists of human capital, relational capital and structural capital. There is a continuous flow between the different parts, which makes intellectual capital dynamic. The flow in intellectual capital is a pre-requisite for learning organisations. Human capital consists of the employees in the organization and the knowledge that they have. Structural capital consists of the systems, processes and technologies used to manage knowledge. Competence development and organizational learning is one part of the structural capital. Relational capital includes all the partners, such as customers, suppliers, partners and stakeholders, which the organization has.

### **2.7.3 Competence management**

Sydänmaanlakka (2001) proposes a framework for competence management. The aim of the framework is continuous development of knowledge in the organisation. Firstly the organisation defines the vision, strategy, targets and core competencies needed. Secondly competence mapping is done on organisational level and consists of departments with needed competencies to provide added value for the organisation. Thirdly new needed competencies are identified and results in individual development plans. Viitala (2013) insists that failure to connect individual development targets to the organisation's vision might lead personal development but a lack of development in the organisational capabilities and competitiveness.

Viitala (2005) insists that there is a bridge between individual knowledge and organisational capabilities that consists of two parts. The first part is the organisations social processes that the employees utilize when interacting with each other. The second part consists of the organisational structure, systems and operating models that steers, supports and even forces processes, which result in knowledge development. The maturity of these components define the level of competence and learning in organisations.

#### **2.7.4 Human resource development**

Viitala (2013) argues that the targets of human resource development, hereafter HRD, are:

- Securing the competency that is required to sustain competitive strategy.
- Improving the efficiency of work.
- Supporting and enabling changes.
- Ensuring and improving the quality of work.
- Fostering innovation and creativity.
- Strengthening the individual's performance, motivation, commitment and competitiveness on the job market.

Price (1997) proposes that HRD is used to demonstrate that employees are valued by the organisation and thus improves employee motivation. It is a strategic approach to invest in human capital. Nowadays HRD is considered more systematic and a focus towards continuous learning and becoming a learning organisation has been identified.

I have proposed Theories for knowledge management in organisations were proposed in this chapter. The literature review is summarized in the next chapter.

### **2.8 Summary of the literature review**

This literature review has presented how an individual transfers information into knowledge that gradually evolves into group learning and organisational learning. Furthermore, the building blocks of the learning organisation and alternatives how learning organisations can be measured have been listed. Finally, the literature review proposed how organisations manage knowledge by turning company vision into a competitive advantage.

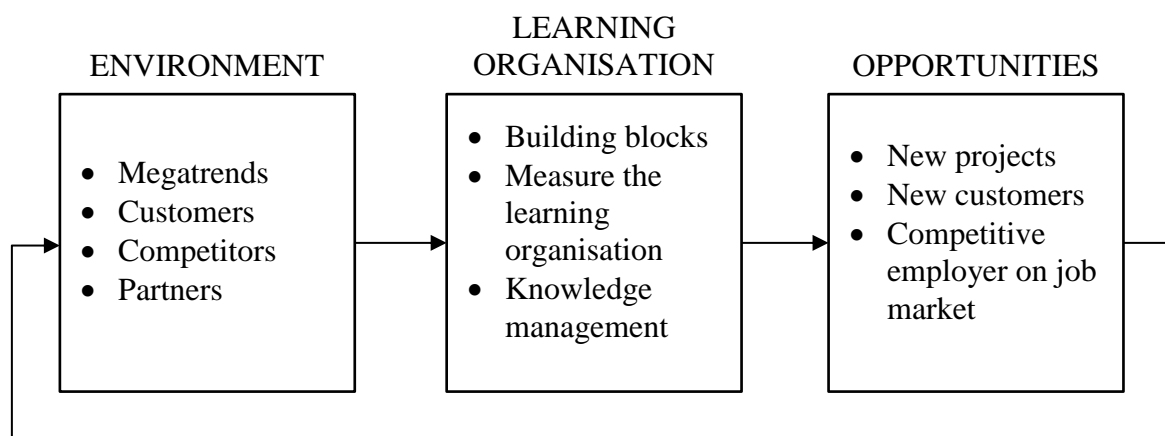
There is a fine line between the concepts of organisational learning and learning organisations. Many of the characteristics of organisational learning also apply to learning organisations. The key difference between these terminologies is that the theories presented in the chapter for organisational learning rely on a certain key concept that results in organisational learning, whereas the building blocks for a learning organisation can be considered more generic. It is easy to agree with Garvin (1993) that many of the theories surrounding learning organisations are vague and lack specificity. However, the learning

mentality presented in organisational learning theories is considered fundamental in order to successfully build a learning organisation.

Researchers have been looking for methods to measure the learning organisations. Alternatives vary from measuring results to conducting different kind of surveys. For this research the surveys seems more applicable and the Diagnostic survey of the learning organisation is likely the best fit. It also corresponds to the identified building blocks of the learning organisation from chapter 2.5. The theoretical framework for the research is proposed in the next chapter.

### 3 Theoretical framework

The purpose of this chapter is to declare a theoretical framework for the research. The introduction chapter and literature review works as a foundation for the theoretical framework. The chapters 1.1, 1.2 and 2.5.7 highlighted the impact of the external environment on an organisation. Chapter 2.5 summarized the building blocks of a learning organisation and chapter 2.6 listed how learning organisations can be measured. Chapter 2.7 stated how knowledge management affects an organisation. Chapters 1.2, 1.4 and 2.4 presented what the outcome of a learning organisation is. Based on these theories the framework for this research depicted in Figure 1.



**Figure 1 Framework of the inputs and effects of a learning organisation**

An organisation that effectively utilizes the signals from its external environment is able to renew its vision and strategy based on identified needs. A learning organisation efficiently learns and renews itself faster, which leads to new projects and customers. The company systematically monitors its state as a learning organisation and uses the results to continuously improve and renew itself. This has a positive effect to the organisation as an employer and the employees' feels valuable on the job market keeping retention rates small as the organisation is able to provide new and challenging projects. The new opportunities change the surrounding environment, which gives new inputs to the organisation and the cycle repeats itself.



## **4 Method**

The method used for this research is presented in this chapter. Quantitative research is often done based on earlier research and part of it is used to form the research questions (Olsson & Sörensen, 2007). The main purpose of the research is to answer the research questions RQ3 and RQ4. That is, whether it is possible to measure and identify improvement targets of a learning organisation. The theoretical framework from chapter 3 is tested empirically to conclude whether the theory is valid (Olsson & Sörensen, 2007). Quantitative methods can be used for analysing numerical values using mathematical procedures (Eliasson, 2013). Trost (2012) argues that quantitative research is used for measuring frequency of parameters. This approach is applicable to find answers for the research questions. The survey is presented in more detail in chapter 4.1. The research process is described in more detail in chapter 4.2.

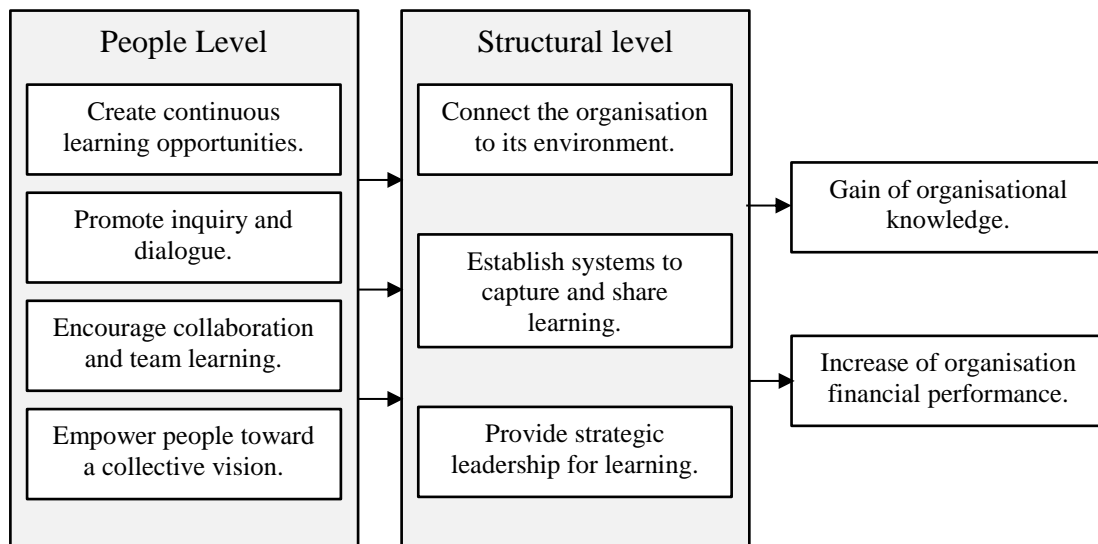
### **4.1 Survey**

#### **4.1.1 Choosing survey**

During the literature review it became apparent that research around the topic of measuring learning organisations existed. These were presented in chapter 2.6. It can be concluded that the Dimensions of the learning organisation questionnaire is the best measurement based on the literature review and the identified building blocks of the learning organisation in chapter 2.5. Using an existing survey has several benefits. The survey has been extensively tested in order to ensure its validity and reliability (Marsick & Watkins, 2003 & Yang et al., 2004). Although the survey has been critiqued (Kim et al., 2016) and limitations were identified, it can be considered sufficient for this research (Marsick & Watkins, 2003 & Yang et al., 2004).

#### **4.1.2 Survey structure/dimensions**

The survey is based on the seven dimensions of the learning organisation that Marsick and Watkins (2003) have identified in their research. In addition, two measures for organisational performance have been developed. Figure 2 depicts the connection between the dimensions and outcomes.



**Figure 2 Dimensions of the Learning Organisation and Performance Outcomes (Yang et al., 2004)**

Each dimension consists of six variables, except the “create continuous learning opportunities dimensions” that has seven variables (Yang et al., 2004). A Likert scale is commonly used in questionnaires to specify the responder’s level of agreement or disagreement to a set of questions that are similarly structured (Troost, 2012). The Likert scale is defined using a test group to see the spread of answers and fine tune questions and amount of answer alternative. The term Likert-type scale refers to the same type of variable structure and answer alternatives, but where the test phase has been omitted. Patel and Davidson (2003) propose that an odd number of answer alternatives allows the person to be neutral in her answer, whereas an equal number of alternatives can be used to reduce central tendency. The variables in this survey are answered on a six point Likert-type scale (Yang et al., 2004).

The questionnaire also contained seven variables that were used to provide additional information about the organisation where the survey was conducted (Marsick & Watkins, 2003). These variables were replaced with five variables tailored for the target organisation in this research. The content of the questionnaire is available in Appendix 1.

## **4.2 Research process**

The progress of the research process is described in this chapter.

### **4.2.1 Communication and missive**

Communication with the respondents was done using email. The questionnaire itself was conducted using a web-based tool. According to Patel & Davidson (2003), a missive should be sent to the participants prior to, or at the same time as the questionnaire. It should contain information about the purpose of the survey, how it benefits the person answering it and how their contribution can affect the outcome. A missive was sent out one day prior to sending out the link to the questionnaire (Appendix 2). The missive and terminology used in the questionnaire was reviewed with a pilot group of five persons prior to sending out any information. The missive contained provided background information for the research, benefits of participating in the survey, practical information such as how employees should mark their work time used for answering the survey and anonymity of the survey. The missive also contained information that a lottery among all participants would be arranged. The lottery prizes were two vouchers to an online book store. The survey was sent out to all employees in the organisation.

### **4.2.2 Anonymity**

The difference between an anonymous and confidential data is that anonymous does not contain any identifier, whereas confidential data contains information, which makes it possible to distinguish who has answered a questionnaire (Patel & Davidson, 2003). The survey tool provided a functionality to keep the survey responses anonymous although it also made it possible to track who has answered the survey or not. These two sets of information cannot be linked as it is internally handled by the survey tool. However, the anonymity of responses can be questioned because of the organisation specific variables that were collected in the questionnaire.

## **4.3 Response data and missing data**

Trost (2012) recommends setting up a schedule for the data collection phase where one needs to consider the optimal time to send the questionnaire and whether and how often reminders should be sent. The missive and link to survey were both sent out to the company employees' mid-day around lunch time and in the middle of the week. The questionnaire was sent out to

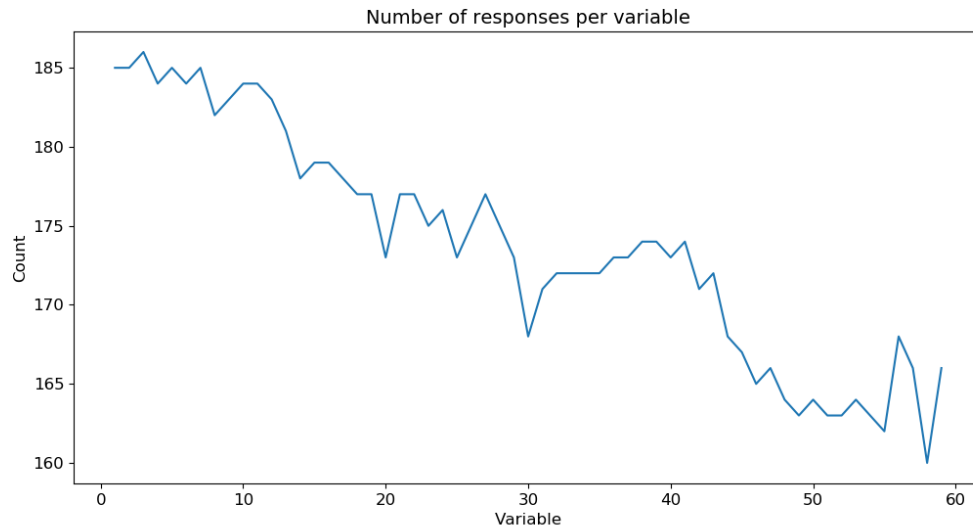
a total of 330 recipients. 65 responses were received after one week. The first reminder was sent out to 265 recipients who either hadn't participated in the survey or who had answered the survey partially. A total of 128 responses were received by the second week. The last reminder was sent out to 202 recipients, which resulted in an additional 58 responses, bringing the total amount of responses to 186.

**Table 1 Amount of received responses**

	<i>Frequency</i>	<i>Cumulative frequency</i>
Initial invitation	65	65
1 <sup>st</sup> reminder	63	128
2 <sup>nd</sup> reminder	58	186
Total	186	

The response rate was 56,4%. There was a total of 44 partial responses in the dataset. Any partial responses in the dataset were dropped in order to avoid any ambiguity in the analysis of data. The final amount of responses was 142, which means that the response rate was 43%. Because the survey consisted of one population and no specific sample groups, this dataset can be considered sufficient and for the results to be reliable.

Further analysis of the responses per variable showed that the answer rate gradually declined, see Figure 3. There are two theories why this occurred. The first theory is that the survey had too many variables and respondents thought that it was too cumbersome to answer. The second theory is that respondents considered the variables in the end of the survey too difficult to answer. The two last dimensions contained variables that concerned the results of a learning organisation and can be difficult to answer (see Appendix 1).



**Figure 3** Number of responses per variable

#### 4.4 Summary of the method

I consider the survey response rate good considering the following aspects. The incentive for employees to answer a survey for scholarly research is rather low compared to changes initiated by the company as there is no certainty whether the answers will actually lead to any organisational changes. The amount of questions was rather high. Some people might have been deterred from filling in the organisation specific variables as they can be used to at least partially identify some respondents.

The selection of method, presentation of the survey structure and data acquisition process was presented in this chapter. In addition, connection to the Literature review and Theoretical framework was proposed. Finally, the response data and handling of partial responses was presented. The results of the research are presented in the next chapter.

## 5 Results

(Classified)

## 6 Discussion

This chapter summarizes the results of my research. The thesis was written relying on existing literature, guidance in research work and my own reflections. The method used in the research is discussed in chapter 6.1. The results of the research are discussed in chapter 6.2. The results in relation to the research problem are discussed in chapter 6.3. The theoretical and practical contributions are listed in chapter 6.4. The implications of the research is discussed in chapter 6.5. Suggested topics for further research are listed in chapter 6.6.

### 6.1 Method discussion

Selection of the survey that best fitted the learning organisation theories was the first step of the method. The literature review was utilized in the selection of survey. The learning organisation building blocks in chapter 2.5 were evaluated with the different methods for measuring a learning organisation in chapter 2.6. The tool that was considered the best fit for this research was presented in chapter 4.1. The survey was planned and the missive reviewed with a test group in chapter 4.2.1. The response data and partial responses were presented in chapter 4.3.

In hindsight there were some aspects that did not turn out as expected. The background variables that were chosen did not provide the additional insights were expected. These background variables were chosen as they were the ones that were used in an organisation survey, which was conducted one year earlier. Plans for being able to make connections to the results of that survey if needed existed. The high amount of responses that were required for some of the background variables to be useable was not taken into account. The employees' team information had to be dropped from the dataset altogether. The number of responses ranged from one to eight responses per team when total amount of responses was 142. The list of customers/products should've been reviewed with experts from the organisation. It did not include all necessary customers and included some alternatives that had to be combined to the due to small amount of responses. Lastly, collecting this background data might have deterred some employees from answering the survey or resulted in responses that were partial and were dropped from the analysis. The survey might have been too long and in some parts too difficult to answer. These challenges were discussed in chapter 4.3. Comments about the length of the survey was received during the evaluation and review of surveys. It was not seen feasible to modify the survey because of the extensive

research that it had undergone previously. Modifying the survey would've nullified that research.

## **6.2 Results discussion**

The results are discussed in the research. In making these conclusions the researcher has relied on over 10 years of work experience with different roles and responsibilities in the organisation where the survey was conducted.

(Classified)

## **6.3 Results in relation to the research problem**

The aim of the thesis was to illuminate the concept of learning organisations as well as identify whether the researcher's organisation can be considered a learning organisation. Answers for these four questions were researched.

### **RQ1: How does learning happen?**

Through a literature review, the thesis has outlined how learning occurs on individual, group and organizational level. The results for this question are summarized in the chapters 2.1 through 2.4.

### **RQ2: What are the building blocks of a learning organisation?**

A literature review was conducted to identify the building blocks of a learning organisation. The building blocks are presented in chapter 2.5.

### **RQ3: Can one measure the level of a learning organisation?**

Different ways to measure a learning organisation were identified through research (chapter 2.6). Based on the previous research and the researcher's understanding a theoretical framework was proposed in chapter 3 as well as method for the research was defined in chapter 4.

### **RQ4: Is it possible to identify what areas to improve in order to constantly learn and develop?**

The empirical research was done by a conducting the learning organisation survey in the target organisation. The empirical part relied on the theoretical framework. The results were



presented and analysed chapter 5. A conclusion of the results with recommendations on how to improve the organisation was presented in chapter 6.2.

## **6.4 Contributions**

The theoretical contributions of this research can be considered limited. The theoretical framework was developed in order to tie together the problem area (chapter 1.2) with the research problems (chapter 1.3) relying on the literature that was reviewed in chapter 2. As such, the theoretical framework does not provide so much new in terms of theoretical contributions.

The practical contributions have resulted in a better understanding on whether the organisation in question is a learning organisation. The research also resulted in three concrete improvement areas for the organisation to consider (chapter 6.2).

## **6.5 Implications**

In the context of this survey it is impossible to conclude whether the theoretical framework (chapter 3) is valid or not. This would require more time and conducting several surveys in order to follow-up the development. This was actually what the theoretical framework implies to do in practice. Only focusing on e.g. one dimension at a time in order to keep the process of follow-up more lean should be considered. At an early stage it was decided to delimit measuring the output of the learning organisation from this research (chapter 1.4) for it is time-consuming and difficult. For the same reason the two outcome dimensions of the survey were not analysed in these results.

## **6.6 Suggestions for the future research**

There are several paths that can be taken if one wants to research this topic further. One route is to measure the changes over time, i.e. is the organisation able to utilize the survey results in order to actually develop itself.

The continuation of this is to measure the outputs of a learning organisation. A small step in this direction would be to focus on the two outcome dimension that the DLOQ survey contains (chapter 4.1.2).

Finally and maybe most interestingly it could be possible to research if there are similarities between learning organisations and the lean/agile methodologies. This could be one way to make the concepts of the learning organisation more concrete.

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## **Dimensions of the learning organisation questionnaire**

A learning organization is one that learns continuously and transforms itself. Learning is a continuous, strategically used process—integrated with and running parallel to work.

In the past decade, organizations have experienced wave after wave of rapid transformation as global markets and external political and economic changes make it impossible for any business or service—whether private, public, or nonprofit—to cling to past ways of doing work. A learning organization arises from the total change strategies that institutions of all types are using to help navigate these challenges. Learning organizations proactively use learning in an integrated way to support and catalyze growth for individuals, teams, and other groups, entire organizations, and (at times) the institutions and communities with which they are linked.

In this questionnaire, you are asked to think about how your organization supports and uses learning at an individual, team, and organizational level. From this data, you and your organization will be able to identify the strengths you can continue to build on and the areas of greatest strategic leverage for development toward becoming a learning organization.

Please respond to each of the following items. For each item, determine the degree to which this is something that is or is not true of your organization. If the item refers to a practice that rarely or never occurs, score it a one [1]. If it is almost always true of your department or work group, score the item as six [6].

There are no right or wrong answers. We are interested in your perception of where things are at this time

### **Individual level**

1. In my organization, people openly discuss mistakes in order to learn from them.
2. In my organization, people identify skills they need for future work tasks.
3. In my organization, people help each other learn.
4. In my organization, people can get money and other resources to support their learning.
5. In my organization, people are given time to support learning.

6. In my organization, people view problems in their work as an opportunity to learn.
7. In my organization, people are rewarded for learning.
8. In my organization, people give open and honest feedback to each other.
9. In my organization, people listen to others' views before speaking.
10. In my organization, people are encouraged to ask "why" regardless of rank.
11. In my organization, whenever people state their view, they also ask what others think.
12. In my organization, people treat each other with respect.
13. In my organization, people spend time building trust with each other.

### **Team or group level**

In this section the term "team/group" means your current project.

14. In my organization, teams/groups have the freedom to adapt their goals as needed.
15. In my organization, teams/groups treat members as equals, regardless of rank, culture, or other differences.
16. In my organization, teams/groups focus both on the group's task and on how well the group is working.
17. In my organization, teams/groups revise their thinking as a result of group discussions or information collected.
18. In my organization, teams/groups are rewarded for their achievements as a team/group.
19. In my organization, teams/groups are confident that the organization will act on their recommendations.

### **Organization level**

20. My organization uses two-way communication on a regular basis, such as suggestion systems, electronic bulletin boards, or town hall/open meetings.



21. My organization enables people to get needed information at any time quickly and easily.
22. My organization maintains an up-to-date database of employee skills.
23. My organization creates systems to measure gaps between current and expected performance.
24. My organization makes its lessons learned available to all employees.
25. My organization measures the results of the time and resources spent on training.
26. My organization recognizes people for taking initiative.
27. My organization gives people choices in their work assignments.
28. My organization invites people to contribute to the organization's vision.
29. My organization gives people control over the resources they need to accomplish their work.
30. My organization supports employees who take calculated risks.
31. My organization builds alignment of visions across different levels and work groups.
32. My organization helps employees balance work and family.
33. My organization encourages people to think from a global perspective.
34. My organization encourages everyone to bring the customers' views into the decision making process.
35. My organization considers the impact of decisions on employee morale.
36. My organization works together with the outside community to meet mutual needs.
37. My organization encourages people to get answers from across the organization when solving problems.
38. In my organization, leaders generally support requests for learning opportunities and training.

- 39. In my organization, leaders share up-to-date information with employees about competitors, industry trends, and organizational directions.
- 40. In my organization, leaders empower others to help carry out the organization's vision.
- 41. In my organization, leaders mentor and coach those they lead.
- 42. In my organization, leaders continually look for opportunities to learn.
- 43. In my organization, leaders ensure that the organization's actions are consistent with its values.

### **Measuring Learning Organization Results at the Organizational Level**

In this section, we ask you to reflect on the relative performance of the organization. You will be asked to rate the extent to which each statement is accurate about the organization's current performance when compared to the previous year. There are no right or wrong answers. We are interested in your perception of current performance.

- 44. In my organization, return on investment is greater than last year.
- 45. In my organization, average productivity per employee is greater than last year.
- 46. In my organization, time to market for products and services is less than last year.
- 47. In my organization, response time for customer complaints is better than last year.
- 48. In my organization, market share is greater than last year.
- 49. In my organization, the cost per business transaction is less than last year.
- 50. In my organization, customer satisfaction is greater than last year.
- 51. In my organization, the number of suggestions implemented is greater than last year.
- 52. In my organization, the number of new products or services is greater than last year.
- 53. In my organization, the percentage of skilled workers compared to the total workforce is greater than last year.

54. In my organization, the percentage of total spending devoted to technology and information processing is greater than last year.
55. In my organization, the number of individuals learning new skills is greater than last Year

**Additional Information about You and Your Organization**

56. How long have you been employed by this company?

- a. Less than 1 year
- b. 1 - less than 4 years
- c. 4 - less than 7 years
- d. 7 - less than 10 years
- e. At least 10 years

57. What is your title/role in the company?

(Classified)

58. What team do you belong to?

(Classified)

59. What customer/product are you currently working for?

(Classified)

60. I work

(Classified)

**Missive**

Hi (classified)!

I'm currently writing my master's thesis about learning organisations. I set out on a mission to find out what the characteristics of a learning organisation are, whether it can be measured, and most importantly; is (classified) a learning organisation? I've figured out the answers to the first two questions. I need your opinion to get the answer to my last research question!

Answering this survey gives value, not only to the research, but also to the organisation. This topic is closely related to the organisational target of supporting professional growth as well as the value discussion where words such as renewal, efficiency and teamwork have been emphasised. As an end result, we want to have a happy customer and happy workers.

I will send you all the survey link on Thursday 22nd of March. The survey does not require any prior knowledge about what a learning organisation is and answering the survey takes approximately 15 minutes.

The time used for answering the survey can be put to (classified) with the description "Learning organisation survey"

Answering the survey is anonymous. Individual answers will be handled with confidentiality, and I will be the only person with access to individual responses of the survey. Subsets of the results are only reported if there is at least five answers in that group.

**There will be a lottery of 2 x 50€ vouchers to Adlibris among those who have participated in the survey.** You will remain anonymous even if you join the lottery.

BR, Tommi